



Hopewell Culture National Historical Park

Cultural Landscape Report and Environmental Assessment

March 1, 2016 Public Review Draft

Acknowledgments

National Park Service

Hopewell Culture National Historical Park
Dean Alexander, Superintendent
Bret Ruby, Archaeology / Chief of Resource Management
Kathleen Brady, Curator
Bruce Lombardo, Biologist
Samuel Quakenbush, Chief of Maintenance
Rick Perkins, Chief Ranger

Midwest Regional Office

Marla McEnaney, Historical Landscape Architect
Dan Jackson, Architectural Historian
Leo Acosta, Resource Management Specialist

Midwest Archaeological Center Timothy Schilling, Archeologist

Historical Landscape Architect

Mundus Bishop
Tina Bishop, ASLA
Becky Froeter-Mathis, ASLA
Shelby Scharen, Preservation Planner
Madalyn Shalkey

Quinn Evans Architects Brenda W. Williams, ASLA Stephanie Austin

ERO Resources Corporation

Mary Powell, Environmental Assessment Specialist

Moneka Worah, Natural Resource Specialist

Table of Contents

Chapter 1. Introduction	1-1
Introduction	1-1
Study Area and Park Units	1-3
Mound City Group	1-4
Hopeton Earthworks	1-4
Hopewell Mound Group	1-4
Seip Earthworks	
High Bank Works	
Spruce Hill	1-5
Project Purpose and Need	1-11
Project Goals	
Methodology	1-13
Park Purpose and Significance	
Mound City Group	
Hopeton Earthworks	1-15
Hopewell Mound Group	
Seip Earthworks	
High Bank Works	
Management	
Related Laws, Regulations, Policies, Orders, and Planning Documents	
Environmental Assessment Impact Topics	
Scope of the Report	
Scoping	
Issues and Impact Topics	
Impact Topics Dismissed from Further Consideration	1-31
Chapter 2. Site History	2-1
Introduction_	
Statement of Significance	
Study Area (AD 1 to AD 400)	
Mound City Group (AD 1 to AD 400)	
Hopeton Earthworks (AD 1 to AD 400)	
Hopewell Mound Group (AD 1 to AD 400)	
Seip Earthworks (AD 1 to AD 400)	
Summary of Archeological Reports	
Periods of Landscape Development	
Pre-Hopewell Culture (pre-AD 1)	
Hopewell Culture (AD 1 to AD 400)	2-13
Indigenous Occupation, post-Hopewell (AD 400 to c.1650)	
Early Historic / European American Settlement (c.1651 to 1844)	
Archeological Exploration / Early Agriculture (1845 to 1916)	
Camp Sherman (1917 to 1922)	
Preservation / Late Agricultural (1923 to 1992)	2-51
Hopewell Culture NHP to present-day (1992 to present)	

Chapter 3. Existing Condition and Analysis / Affected Environment	
Introduction	
Assessment of Integrity	
Contributing and Non-Contributing Features	
Study Area	
Mound City Group	
Hopeton Earthworks	
Hopewell Mound Group	
Seip Earthworks	
High Bank Works	3-6
Study Area	3-7
Introduction	3-7
Natural Systems and Features	3-7
Spatial Organization / Topography / Views	3-13
Land Use	
Archeological Features	
Circulation.	
Vegetation	
Mound City Group	
Introduction	
Spatial Organization / Topography / Views	
Archeological Features	
Circulation	
Vegetation	
Buildings and Structures	
Small Scale Features	
Hopeton Earthworks	
Introduction	
Spatial Organization / Topography / Views	
Archeological Features	
Circulation	
Vegetation	
Buildings and Structures.	
Small Scale Features	
Hopewell Mound Group	
Introduction	
Spatial Organization / Topography / Views.	
Archeological Features	
Circulation	3-101
Vegetation	3-105
Buildings and Structures	
Small Scale Features	3-113
Seip Earthworks	3-117
Introduction	3-117
Spatial Organization / Topography / Views	
Archeological Features	
Circulation	
Vegetation	
Buildings and Structures	
Small Scale Features	

High Bank Works	3-139
Introduction	
Spatial Organization / Topography / Views.	
Archeological Features	
Circulation.	
Vegetation	
Small Scale Features	
Affected Environment	
Cultural Resources	
Vegetation	
Wildlife	
Visitor Use	
Park Operations	
Visual Resources	
Fisher Rosser Cos.	
oter 4 - Treatment Alternatives	4-1
Introduction	
Treatment Approaches	
Common to All Action Alternatives.	4-5
Mound City Group	4-7
No Action Alternative	4-7
Common to All Action Alternatives	4-8
Action Alternative 1: Preserving Earthwork Complexes	4-9
Action Alternative 2 : Conserving and Revealing Earthwork Complexes	4-13
Hopeton Earthworks	4-19
No Action Alternative	
Common to All Action Alternatives	
Action Alternative 1: Preserving Earthwork Complexes	4-21
Action Alternative 2: Conserving and Revealing Earthwork Complexes	
Hopewell Mound Group	4-29
No Action Alternative	4-29
Common to All Action Alternatives	
Action Alternative 1: Preserving Earthwork Complexes	
Alternative 2: Conserving and Revealing Earthwork Complexes.	4-35
Seip Earthworks	4-41
No Action Alternative	
Common to All Action Alternatives	
Action Alternative 1: Preserving Earthwork Complexes	
Action Alternative 2: Conserving and Revealing Earthwork Complexes	
High Bank Works	
No Action Alternative	
Common to All Action Alternatives	
Action Alternative 1: Preserving Earthwork Complexes	
Action Alternative 2: Conserving and Revealing Earthwork Complexes	
Alternatives Comparison.	
Mitigation and Best Management Practices	
Environmentally Preferable Alternative	
· · · · · · · · · · · · · · · · · · ·	

Chapter 5. Environmental Consequences	5-1
Introduction	
General Methods	
Cumulative Impacts	
Methods for Assessing Cumulative Impacts	
Past, Present, and Reasonably Foreseeable Future Actions	
Cultural Resources	
Vegetation	
Wildlife	
Visitor Use and Experience	
Park Operations	5-15
Visual Resources	5-18
Charter C. Transcript Disc	
Chapter 6 - Treatment Plan	
Introduction	
Treatment Approach	
Study Area	
Natural Systems and Features.	
Spatial Organization/Topography/Views	
Land Use	
Archeological Features	
Circulation	
Vegetation	
Small Scale Features	
Best Management Practices	
General	
Repair and Reconstruction	
Circulation	
Vegetation	
Mound City Group	
Spatial Organization/Topography/Views	
Archeological Features	
Circulation	
Vegetation	
Buildings and Structures	
Small Scale Features	
Hopeton Earthworks	
Spatial Organization/Topography/Views	
Archeological Features	
Circulation	
Vegetation	
Buildings and Structures	
Hopewell Mound Group	
Spatial Organization/Topography/Views	
Archeological Features	
Circulation	
Vegetation	
Buildings and Structures.	
Small Scale Features	6-43

Seip Earthworks	6-47
Spatial Organization/Topography/Views	
Archeological Features	6-48
Circulation	6-50
Vegetation	6-50
Buildings and Structures	6-51
Small Scale Features	6-52
High Bank Works	6-55
Spatial Organization/Topography/Views	6-55
Archeological Features	6-56
Circulation	6-57
Vegetation	6-57
Small Scale Features	6-58
Implementation	

A. Bibliography B. Terminology C. Spruce Hill Preserve D. Archeological Investigations E. Spatial Data and Rationale F. Consultation / Coordination Documents G. FMSS - Existing Condition Crosswalk Table H. Seed Mixes List of Illustrations and Tables LLUSTRATION 1-1 Study Area 1-9 ILLUSTRATION 3-1 Mound City Group - Existing Condition 3-55 ILLUSTRATION 3-2 Mound City Group - Existing Condition 3-57 ILLUSTRATION 3-3 Hopeton Earthworks - Existing Condition 3-15 ILLUSTRATION 3-4 Hopewell Mound Group - Existing Condition 3-151 ILLUSTRATION 3-5 Seip Earthworks - Existing Condition 3-137 ILLUSTRATION 4-1 High Bank Works - Existing Condition 3-153 ILLUSTRATION 4-2 Mound City Group - Action Alternative 1 4-11 ILLUSTRATION 4-4 Hopeton Earthworks - Action Alternative 2 4-27 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-6 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-8 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-9 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-9 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-1 High Bank Works - Action Alternative 1 4-43 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-27 ILLUSTRATION 4-1 High Bank Works - Action Alternative 1 4-47 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-27 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-1 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-2 Study Area - Preferred Alternative 6-21 ILLUSTRATION 6-3 Mound City Group - Preferred Alternative 6-21 ILLUSTRATION 6-4 Hopeton Earthworks - Preferred Alternative 6-37 ILLUSTRATION 6-4 Hopeton Earthworks - Preferred Alternative 6-37 ILLUSTRATION 6-4 Hopeton Earthworks - Preferred Alternative 6-37 ILLUSTRATION 6-4 Hopeton Earthworks - Preferred Alternative 6-37
C. Spruce Hill Preserve D. Archeological Investigations E. Spatial Data and Rationale F. Consultation / Coordination Documents G. FMSS - Existing Condition Crosswalk Table H. Seed Mixes List of Illustrations and Tables LLUSTRATION 1-1 Study Area 1-9 ILLUSTRATION 3-1 Mound City Group - Existing Condition 3-55 ILLUSTRATION 3-2 Mound City Group - Enlarged Existing Condition 3-65 ILLUSTRATION 3-3 Hopeton Earthworks - Existing Condition 3-83 ILLUSTRATION 3-4 Hopewell Mound Group - Existing Condition 3-115 ILLUSTRATION 3-5 Seip Earthworks - Existing Condition 3-135 ILLUSTRATION 4-1 Mound City Group - Action Alternative 1 4-11 ILLUSTRATION 4-2 Hopeton Earthworks - Action Alternative 2 4-17 ILLUSTRATION 4-3 Hopewell Mound Group - Action Alternative 1 4-23 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 1 4-23 ILLUSTRATION 4-6 Hopewell Mound Group - Action Alternative 1 4-23 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-8 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-9 Hopewell Mound Group - Action Alternative 1 4-33 ILLUSTRATION 4-9 Hopewell Mound Group - Action Alternative 2 4-51 ILLUSTRATION 4-10 Hopewell Mound Group - Action Alternative 2 4-51 ILLUSTRATION 4-10 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 4-10 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 4-10 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-1 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-2 Study Area - Preferred Alternative 6-29 ILLUSTRATION 6-3 Mound City Group - Preferred Alternative 6-29
D. Archeological Investigations E. Spatial Data and Rationale F. Consultation / Coordination Documents G. FMSS - Existing Condition Crosswalk Table H. Seed Mixes List of Illustrations and Tables ILLUSTRATION 1-1 Study Area 1-9 ILLUSTRATION 3-1 Mound City Group - Existing Condition 3-55 ILLUSTRATION 3-2 Mound City Group - Enlarged Existing Condition 3-55 ILLUSTRATION 3-3 Hopeton Earthworks - Existing Condition 3-83 ILLUSTRATION 3-4 Hopewell Mound Group - Existing Condition 3-115 ILLUSTRATION 3-5 Seip Earthworks - Existing Condition 3-137 ILLUSTRATION 4-1 Mound City Group - Action Alternative 1 4-11 ILLUSTRATION 4-2 Hopeton Earthworks - Action Alternative 2 4-27 ILLUSTRATION 4-3 Hopeton Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 1 4-23 ILLUSTRATION 4-6 Hopewell Mound Group - Action Alternative 2 4-39 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 1 4-47 ILLUSTRATION 4-8 Seip Earthworks - Action Alternative 1 4-47 ILLUSTRATION 4-9 Hopewell Mound Group - Action Alternative 2 4-39 ILLUSTRATION 4-9 Hopewell Mound Group - Action Alternative 2 4-39 ILLUSTRATION 4-1 Hopewell Mound Group - Action Alternative 2 4-39 ILLUSTRATION 4-1 Hopewell Mound Group - Action Alternative 2 4-39 ILLUSTRATION 4-1 Hopewell Mound Group - Action Alternative 2 4-47 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-51 ILLUSTRATION 6-1 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-2 Study Area - Preferred Alternative 6-29 ILLUSTRATION 6-3 Mound City Group - Preferred Alternative 6-29
E. Spatial Data and Rationale F. Consultation / Coordination Documents G. FMSS - Existing Condition Crosswalk Table H. Seed Mixes List of Illustrations and Tables ILLUSTRATION 1-1 Study Area 1-9 ILLUSTRATION 3-1 Mound City Group - Existing Condition 3-55 ILLUSTRATION 3-2 Mound City Group - Enlarged Existing Condition 3-83 ILLUSTRATION 3-3 Hopeton Earthworks - Existing Condition 3-83 ILLUSTRATION 3-4 Hopewell Mound Group - Existing Condition 3-115 ILLUSTRATION 3-5 Seip Earthworks - Existing Condition 3-137 ILLUSTRATION 3-6 High Bank Works - Existing Condition 3-133 ILLUSTRATION 4-1 Mound City Group - Action Alternative 1 4-11 ILLUSTRATION 4-2 Mound City Group - Action Alternative 2 4-17 ILLUSTRATION 4-3 Hopeton Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 1 4-23 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 2 4-39 ILLUSTRATION 4-8 Seip Earthworks - Action Alternative 1 4-47 ILLUSTRATION 4-9 High Bank Works - Action Alternative 2 4-39 ILLUSTRATION 4-9 High Bank Works - Action Alternative 2 4-51 ILLUSTRATION 4-10 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-1 Implementation Choices 6-21 ILLUSTRATION 6-2 Study Area - Preferred Alternative 6-21 ILLUSTRATION 6-3 Mound City Group - Preferred Alternative 6-29
F. Consultation / Coordination Documents G. FMSS - Existing Condition Crosswalk Table H. Seed Mixes List of Illustrations and Tables ILLUSTRATION 1-1 Study Area 1.9 ILLUSTRATION 3-1 Mound City Group - Existing Condition 3.55 ILLUSTRATION 3-2 Mound City Group - Enlarged Existing Condition 3.57 ILLUSTRATION 3-3 Hopeton Earthworks - Existing Condition 3.683 ILLUSTRATION 3-4 Hopewell Mound Group - Existing Condition 3.115 ILLUSTRATION 3-5 Seip Earthworks - Existing Condition 3.137 ILLUSTRATION 3-6 High Bank Works - Existing Condition 3.137 ILLUSTRATION 4-1 Mound City Group - Action Alternative 1 4-11 ILLUSTRATION 4-2 Hopeton Earthworks - Action Alternative 2 4-27 ILLUSTRATION 4-3 Hopeton Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-6 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-8 Seip Earthworks - Action Alternative 1 4-47 ILLUSTRATION 4-9 High Bank Works - Action Alternative 2 4-51 ILLUSTRATION 4-10 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-1 Implementation Choices 6-29 ILLUSTRATION 6-2 Study Area - Preferred Alternative 6-21 ILLUSTRATION 6-3 Mound City Group - Preferred Alternative 6-29
List of Illustrations and Tables ILLUSTRATION 1-1 Study Area 1-9 ILLUSTRATION 3-1 Mound City Group - Existing Condition 3-55 ILLUSTRATION 3-2 Mound City Group - Enlarged Existing Condition 3-55 ILLUSTRATION 3-3 Hopeton Earthworks - Existing Condition 3-83 ILLUSTRATION 3-4 Hopewell Mound Group - Existing Condition 3-115 ILLUSTRATION 3-5 Seip Earthworks - Existing Condition 3-137 ILLUSTRATION 3-6 High Bank Works - Existing Condition 3-137 ILLUSTRATION 4-1 Mound City Group - Action Alternative 1 4-11 ILLUSTRATION 4-2 Mound City Group - Action Alternative 2 4-17 ILLUSTRATION 4-4 Hopeton Earthworks - Action Alternative 1 4-23 ILLUSTRATION 4-5 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-6 Hopewell Mound Group - Action Alternative 2 4-27 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 1 4-33 ILLUSTRATION 4-7 Seip Earthworks - Action Alternative 2 4-39 ILLUSTRATION 4-8 Hopewell Mound Group - Action Alternative 2 4-39 ILLUSTRATION 4-9 High Bank Works - Action Alternative 2 4-51 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-51 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-51 ILLUSTRATION 4-1 High Bank Works - Action Alternative 2 4-61 ILLUSTRATION 6-1 Implementation Choices 6-8 ILLUSTRATION 6-2 Study Area - Preferred Alternative 6-29
List of Illustrations and Tables ILLUSTRATION 1-1 Study Area
List of Illustrations and Tables ILLUSTRATION 1-1 Study Area
ILLUSTRATION 1-1Study Area1-9ILLUSTRATION 3-1Mound City Group - Existing Condition3-55ILLUSTRATION 3-2Mound City Group - Enlarged Existing Condition3-57ILLUSTRATION 3-3Hopeton Earthworks - Existing Condition3-83ILLUSTRATION 3-4Hopewell Mound Group - Existing Condition3-115ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Mound City Group - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 24-27ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-33ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 24-51ILLUSTRATION 4-10High Bank Works - Action Alternative 24-51ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 1-1Study Area1-9ILLUSTRATION 3-1Mound City Group - Existing Condition3-55ILLUSTRATION 3-2Mound City Group - Enlarged Existing Condition3-57ILLUSTRATION 3-3Hopeton Earthworks - Existing Condition3-83ILLUSTRATION 3-4Hopewell Mound Group - Existing Condition3-115ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Mound City Group - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 24-27ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-33ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 24-51ILLUSTRATION 4-10High Bank Works - Action Alternative 24-51ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 3-1Mound City Group - Existing Condition3-55ILLUSTRATION 3-2Mound City Group - Enlarged Existing Condition3-57ILLUSTRATION 3-3Hopeton Earthworks - Existing Condition3-83ILLUSTRATION 3-4Hopewell Mound Group - Existing Condition3-115ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Hopeton Earthworks - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 24-27ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 24-51ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 3-2Mound City Group - Enlarged Existing Condition3-57ILLUSTRATION 3-3Hopeton Earthworks - Existing Condition3-83ILLUSTRATION 3-4Hopewell Mound Group - Existing Condition3-115ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Hopeton Earthworks - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 24-27ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 3-3Hopeton Earthworks - Existing Condition3-83ILLUSTRATION 3-4Hopewell Mound Group - Existing Condition3-115ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Mound City Group - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-4Hopeton Earthworks - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 3-4Hopewell Mound Group - Existing Condition3-115ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Hopeton Earthworks - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 24-51ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 3-5Seip Earthworks - Existing Condition3-137ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Mound City Group - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-4Hopeton Earthworks - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 3-6High Bank Works - Existing Condition3-153ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Mound City Group - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-4Hopewell Mound Group - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-1Mound City Group - Action Alternative 14-11ILLUSTRATION 4-2Hopeton Earthworks - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-4Hopewell Mound Group - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-2Mound City Group - Action Alternative 24-17ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-4Hopeton Earthworks - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-3Hopeton Earthworks - Action Alternative 14-23ILLUSTRATION 4-4Hopeton Earthworks - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-4Hopeton Earthworks - Action Alternative 24-27ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-5Hopewell Mound Group - Action Alternative 14-33ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-6Hopewell Mound Group - Action Alternative 24-39ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-7Seip Earthworks - Action Alternative 14-47ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-8Seip Earthworks - Action Alternative 24-51ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-9High Bank Works - Action Alternative 14-57ILLUSTRATION 4-10High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 4-10 High Bank Works - Action Alternative 24-61ILLUSTRATION 6-1 Implementation Choices6-8ILLUSTRATION 6-2 Study Area - Preferred Alternative6-21ILLUSTRATION 6-3 Mound City Group - Preferred Alternative6-29
ILLUSTRATION 6-1Implementation Choices6-8ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 6-2Study Area - Preferred Alternative6-21ILLUSTRATION 6-3Mound City Group - Preferred Alternative6-29
ILLUSTRATION 6-3 Mound City Group - Preferred Alternative 6-29
1LLUSTRATION 0-4 HOPEIGH Earthworks - Freierreu Alternative
ILLUSTRATION 6-5 Hopewell Mound Group - Preferred Alternative
ILLUSTRATION 6-6 Seip Earthworks - Preferred Alternative 6-53
ILLUSTRATION 6-7 High Bank Works - Preferred Alternative 6-59
List of Tables
TABLE 1-1. Impact Topics Retained and Relevant Laws, Regulations, and Policies1-29
TABLE 4-1. Alternatives Matrix 4-2
TABLE 4-2. Mitigation Measures and Best Management Practices 4-64
TABLE 4-3. Impact Summary
TABLE 6-1. Features Treatment Matrix 6-6
TABLE 6-2. Implementation 6-61